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Presenting a model for predicting computer anxiety of Tehran Islamic Azad Universities' physical education students in terms of intelligence beliefs and achievement goals

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Abstract

This research, through path analysis, attempts to present a model for predicting computer anxiety in terms of intelligence beliefs and achievement goals. To do so, 375 physical education university students (226 female & 149 male) of Tehran Islamic Azad Universities were chosen through cluster sampling. They, then, were asked to answer a questionnaire consisted of intelligence beliefs, achievement goals, and computer anxiety subscales. The results of research generally showed that the relationship between intelligence beliefs (entity and incremental) and computer anxiety is different regarding the mediating role of achievement goals. Entity intelligence beliefs through performance-avoidance goals had positive effects on computer anxiety. In contrast, incremental intelligence beliefs affected computer anxiety negatively through mastery and performance-approach goals.

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Keywords: computer anxiety, intelligence beliefs, achievement goals;

1. Introduction

Information & Communication Technology is the main distinction of our age compared to the past and making students ready for using computers and ICT is necessary and inevitable. However, while the acceptance of technology and exhibition of its rapid progresses in new and unknown areas proceeds in a quick pace, negative attitudes towards the use of technology has also increased.

While some hold the view that computer has come to be an indispensable ally in education, others, do not see any need for its introduction and thus continue to resist this innovation in education (Arigbabu, 2009). Computer anxiety is one of the obstacles cause people to avoid computers. Underestimating or ignoring this problem, ultimately, will only result in the worsening of situation and increase withdrawal from computers. Computer anxiety is an important problem in many societies since many people carry negative feelings toward computers and avoid using computers despite the big infusion of computers in every part of life (Tekinarslan, 2008).

However, during the last decade, multimedia classes with computer-related technologies are rapidly becoming the norm in academic environments. Students are increasingly required to prepare their assignments on the computer and use computers for class projects.

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Hence, it is likely that many of them will avoid confronting computers due to the aforementioned anxiety, which will result in being deprived from the contemporary vast world of information, speed and precision in the field of research and educational activities (Jahromi, Lavasani, Rastegar, & Mooghali, 2010).

Golamali Lavasani (2002) assumes that computer anxiety is a kind of emotional and cognitive reaction that occurs while the individual is working and interacting with computer and it happens as a consequence of the lack of awareness and the individual's attitude towards the computer as a threatening object. Since computer anxiety is a response to an external danger or threat, and is not an intrinsic concept or a personality characteristic, we can call it a kind of state anxiety (cited in Jahromi et al. 2010).

Motivational and cognitive variables are intrapersonal factors affecting performance. To determine the relationship between motivational-cognitive factors with individuals' performance, the social-cognitive approach has been repeatedly considered. Dweck theory in association with intelligence beliefs and achievement goals lies in this framework. The key concepts in Dweck social-cognitive theory are intelligence beliefs and achievement goals. There are two kinds of intelligence beliefs: incremental and entity. Incremental intelligence beliefs indicate that intelligence is a flexible, increasable and controllable states (Dupeyrat & Marine, 2005; Ames & Archer, 1988). Those students who hold an incremental intelligence belief focus on improving their competencies and gaining new knowledge. They do their best to overcome past failures (Dupeyrat & Marine, 2005).

In contrast, entity intelligence beliefs indicate that intelligence is a fixed uncontrollable inflexible state (Dupeyrat & Marine, 2005; Ames & Archer, 1988). Students with entity intelligence beliefs focus on achieving good performance, spend the least effort to achieve their goals and to overcome problems, and abandon easily when faced with challenges. According to Dweck, intelligence beliefs are side factors of success behavior and don't affect success directly.

The concept of achievement goals or goal orientation is essentially indicative of students' reasons for doing academic tasks (Braten & Stromso, 2003). Students in this regard ask themselves: "why do I do this task?". According to Elliot & Church, we can conceive three kinds of goals (Elliot & Church).

Those with performance-approach goals tend to emphasize demonstrating their skills in comparison with others and assume learning as a tool to achieve their goals. Further, those who adopt performance-avoidance goals concentrate on avoiding lack of skills in comparison with peers and classmates and their attention is on avoiding failure. At last, those who adopt mastery goals insist on elaborating their skills, learning, and mastery (Jahromi et al. 2010). Some researchers have studied the relationships between intelligence beliefs and achievement goals.

Some studies have showed a positive relation between incremental beliefs and mastery goals (Dweck & Leggett, 1988; Spinath & Stiensmeier-Pelster, 2001). Some others have demonstrated that those with entity beliefs adopt performance-approach goals (Dweck & Leggett, 1988; Vermetten, Lodewijks, & Vermunt, 2001). Furthermore, entity beliefs have had relationship with performance-avoidance goals (Spinath & Stiensmeier-Pelster, 2001). However, some researchers have reached inconsistent findings (Dupeyrat & Marine, 2005).

Findings are also inconsistent regarding the relation of different kinds of achievement goals with computer anxiety. For example, Tanaka, Takehara & Yamauchi (2006) found that performance-approach goals are negatively whereas performance-avoidance goals are positively related to state anxiety. Jahromi et al. (2010) found that there was a positive relationship between performance-avoidance goals and computer anxiety but the relation of mastery goals and computer anxiety was negative. No significant relationship was found between performance-approach goals and computer anxiety in their study.

According to what was mentioned and based on the theoretical and empirical literature, a conceptual model is presented and will be then tested. It should be mentioned that the dotted lines in the model represent negative relations.

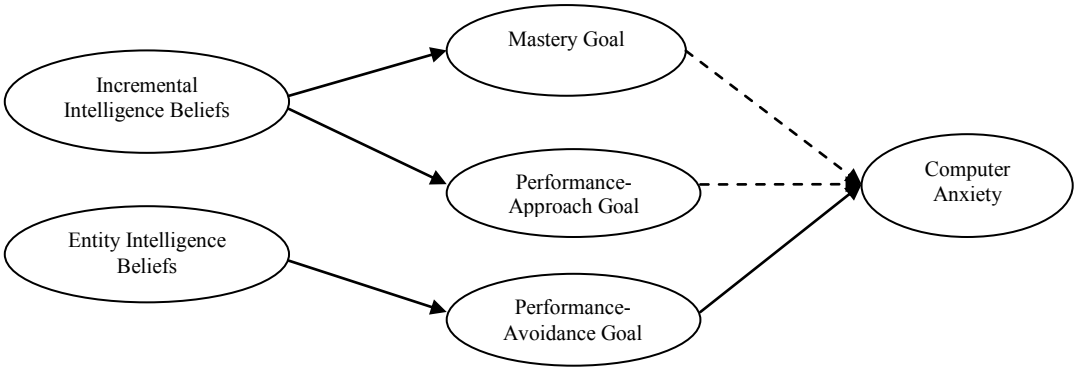

Fig 1. The conceptual model of predicting computer anxiety

2. Method

2.1. Participants

The sample consisted of 375 (149 males and 226 females) physical education and sport science students of Islamic Azad Universities in Tehran who were chosen through cluster sampling.

2.2. Measures

They completed a 53-item questionnaire developed to measure the constructs indicated in fig. 1. Computer anxiety Scale (2004) developed by Beckers and Schmidt ($\alpha = 0.71$), Achievement Goal Scale (1997) by Middleton & Midgley (a = .84), and Intelligence Beliefs (2005) by Dupeyrat & Marine (a = .71). To determine the construct validity of the variables, factor analysis was used. In the table below, the fit indices of variables have been presented.

Table 1. Fit indices of variables

Fit indices	Intelligence beliefs	Achievement goals	Computer anxiety
x2/df	2.41	1.77	2.26
RMSEA	0.048	0.04	0.05
GFI	0.95	0.96	0.93
AGFI	0.95	0.92	0.91

3. Results

Relations between variables were examined with zero-order correlations for all variables in table 2.

Table 2. The correlations among variables involved in the model

No.	Variables	1	2	3	4	5	6
1	Entity intelligence beliefs	-					
2	Incremental intelligence beliefs	-0.09	-				
3	Mastery goal	0.04	0.38**	-			
4	Performance-approach goal	0.13*	0.21**	0.08	-		
5	Performance-avoidance goal	0.24**	-0.42**	-0.11*	0.07	-	
6	Computer anxiety	0.02	0.06	-0.23**	-0.18**	0.41**	-

*p<0.05 **p<0.01

As is seen, performance-avoidance goals, mastery goals, performance-approach goals, incremental and entity intelligence belief had respectively the most correlation coefficients with computer anxiety. As it was expected, performance-avoidance goals were positively but mastery goals and performance-approach goals were negatively correlated with computer anxiety.

To test the conceptual model, the path analysis was applied. In Table 3, direct, indirect and total effects of variables will be presented along with their meaningful levels.

Table 3. Standardized direct, indirect, and total effects in the final model

Predictor	Criterion	Direct effect	Indirect effect	Total effect
Incremental intelligence beliefs	Mastery goals	0.33**	-	0.33**
Incremental intelligence beliefs	Performance-approach goals	0.18**	-	0.18**
Entity intelligence beliefs	Performance-avoidance goals	0.20**	-	0.20**
Mastery goals	Computer anxiety	-0.21**	-	-0.21**
Performance-approach goals		-0.16*	-	-0.16*
Performance-avoidance goals		0.39**	-	0.39**
Incremental intelligence beliefs		-	0.05*	0.05*
Entity intelligence beliefs		-	0.02*	0.02*

As the above table illustrates, none of the exogenous variables (i.e., intelligence beliefs) have direct effect on computer anxiety, whereas the indirect effect of incremental intelligence belief (0.05) and entity intelligence belief (0.02) on computer anxiety is meaningful at the level 0.05 and is done respectively through mastery and performance-approach goals and performance-avoidance goals. Therefore, we can say that mastery and performance-approach goals play a mediating role between incremental intelligence belief and computer anxiety whereas performance-avoidance goals mediate the relationship between entity intelligence belief and computer anxiety. Among endogenous variables, performance-avoidance goal has the most direct effects on computer anxiety (0.39) which is meaningful at level 0.01. Moreover, the explained amount of the variance of computer anxiety is 34 percent. In the following, the fitted model of computer anxiety and the fit indices will be presented.

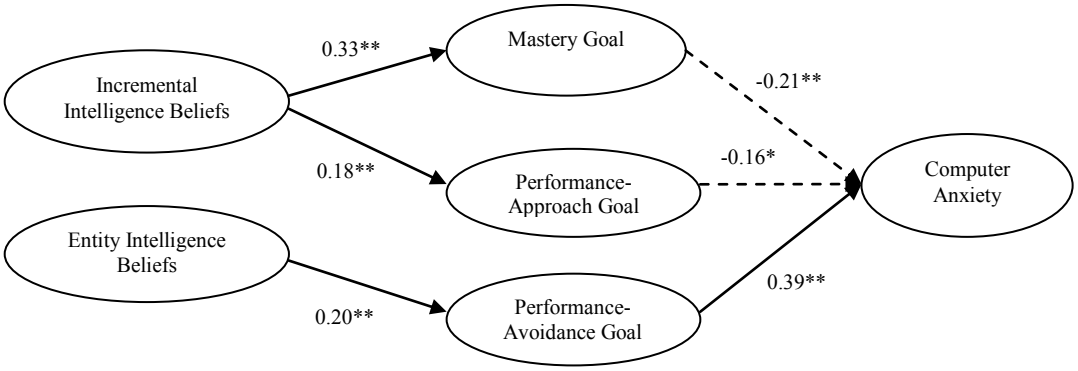

Fig 2. The fitted model of predicting computer anxiety

Table 4: Fit indices computer anxiety model

x2/df	RMSEA	GFI	AGFI
2.65	0.045	0.98	0.97

4. Discussion

Among endogenous variables, performance-avoidance goals had the most direct effect on computer anxiety, which indicates the negative detrimental effects of them on students. The positive direct effect of entity beliefs on performance-avoidance goals shows that those who believe in fixed unchangeable intelligence focus on achieving success and gaining rewards just to avoid punishment and blame. This is in line with findings of Spinath & Stiensmeier-Pelster (2001) but not in line with Dupeyrat & Marine (2005).

The positive direct effect of incremental beliefs on mastery and performance-approach goals indicate that believing in the fact that intelligence is flexible and increasable may guide students towards elaborating their skills and learning. This finding is in line with Dweck & Leggett (1988) and Spinath & Stiensmeier-Pelster (2001).

Regarding the negative effect of mastery goals on computer anxiety, it is evident that those who try to master skills and new knowledge and learn with internal motivation are more probable to have computer anxiety. This finding is in line with Jahromi et al. (2010) findings. Moreover, the results showed that performance-approach goals are also negatively related to computer anxiety. With the aim of showing their capabilities to others, students with performance-approach goals want to achieve success and approval of others. This view may cause them to try harder in learning contexts and make them more focused on academic tasks. This finding is inconsistent with Jahromi et al. (2010).

The results demonstrate that performance-avoidance goals have significant positive effect on computer anxiety. It is completely obvious that adopting avoidance goals will be associated with inappropriate and adverse consequences; one of them may be computer anxiety. This finding is in line with Jahromi et al. (2010) and Tanaka et al. (2006).

References

Arigbabu, A. A. (2009). Examining psychometric characteristics of the computer anxiety scale. Computers in Human Behavior, 25, 229–232.
Tekinarslan, E. (2008). Computer anxiety: A cross-cultural comparative study of Dutch and Turkish university students. Computers in Human Behavior, 24, 1572–1584.

Jahromi, R. G., Lavasani, M. G., Rastegar, A., & Mooghali, A. (2010). Presenting a model of predicting computer anxiety in terms of epistemological beliefs and achievement goals. Journal of Computers in Human Behavior, 26, 602-608.

Dupeyrat, C., & Marine, C. (2005). Implicit theories of intelligence, goal orientation, cognitive engagement, and achievement: A test of Dweck ◌s model with returning to school adults. Contemporary Educational Psychology, 30(1), 43-59.

Ames, C., & Archer, J. (1988). Achievement goal in classroom: Student' learning strategies and motivation processes. Journal of Educational Psychology, 80(3), 160-167.

Braten, I., & Stromso, H. (2003). Epistemological belief and implicit theories of intelligence as predictos of achievement goals. Contemporary Educational Psychology, 29, 371-388.

Elliot, A. J., & Church, M. A. (1997). A hierarchical model of approach and avoidance achievement motivation. Journal of Personality and Social Psychology, 72(1), 218-232.

Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. Psychological Review, 95(2), 256-273.

Spinath, B., & Stiensmeier-Pelster, J. (2001). Implicit theories about the malleability of intelligence and ability. Psychologische Beitraege, 43, 53–76.

Vermetten, Y. J., Lodewijks, H. G., & Vermunt, J. D. (2001). The role of personality traits and goal orientation in strategy use. Contemporary Educational Psychology, 26, 149-170.

Tanaka, A., Takehara, T., & Yamauchi, H. (2006). Achievement goals in a presentation task: Performance expectancy, achievement goals, state anxiety, and task performance. Learning and Individual Differences, 16, 93-99.